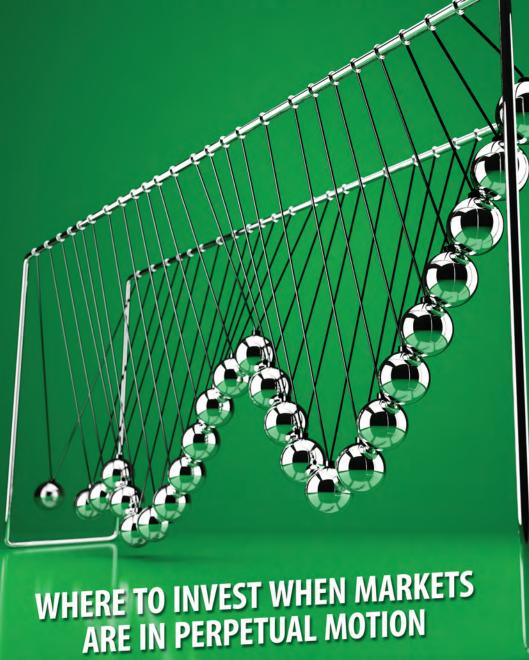
## WELLS FARGO

INVESTMENT INSTITUTE







# The Times When It's Toughest to Invest May Be the Best

Performance of the Standard & Poor's 500® Composite Index, 1965-2016 Q1



# Uncertainty Poses Risks and Presents Opportunities

Market uncertainty is a fact of life, and volatility is a normal part of market behavior. As uncertainty builds, markets generally respond by becoming erratic and unpredictable—exhibiting wide-ranging price swings, increased trading volumes, and widening credit spreads.

Disruptive forces such as geopolitical crises, terrorist attacks, economic recessions, scandalous media leaks, or consequential central bank policies can trigger short-lived yet influential episodes of market volatility. Long-lasting disruptions may come from revolutionary business models or large-scale events. Even technological and biomedical breakthroughs that help improve our lives and which are evolving rapidly can cause disruptions. Inventive companies are challenging traditional business models and revolutionizing the ways we transact daily business. Some of these disruptors can utterly transform our way of life. At the same time, disruptive events can make indelible marks on capital markets, leading to dislocation and instability.

It's important for investors to recognize how such transformative events—coupled with an increasingly interconnected global economy—are contributing to market volatility. Although investors enjoy when the market goes up, when the market goes down, they often find that challenging. History tells us that most investors are not proficient at predicting stock market behavior and that market timing typically is an exercise in futility.

Designing an appropriate plan with the suitable asset mix and proper diversification—and sticking with it through the ebbs and flows of the market over time—historically has proven to be an effective investment strategy. Investors who use volatility and market dislocations to their advantage can help enhance their portfolio's performance. Additionally, investing in companies that develop disruptive technologies, medical advances, or organizational processes may be sources of longer-term growth for portfolios.



# Disruptive Factors We Discuss in This Report:

Economic uncertainties that prompt both businesses and consumers to assume more defensive postures.

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Historic world events that are altering the geopolitical landscape.

PAGE 6

➤ Technological innovation and biomedical breakthroughs that are significantly altering our lives.

PAGE 8

➤ Pioneering business models that are challenging and revolutionizing the ways we transact daily business.

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## QUESTIONS WE ADDRESS

- What are the risks and opportunities presented by volatility?
- What types of disruptive forces fuel periodic volatility?
- Now can investors use volatility to their advantage?
- What types of investment strategies may be appropriate during periods of heightened volatility?

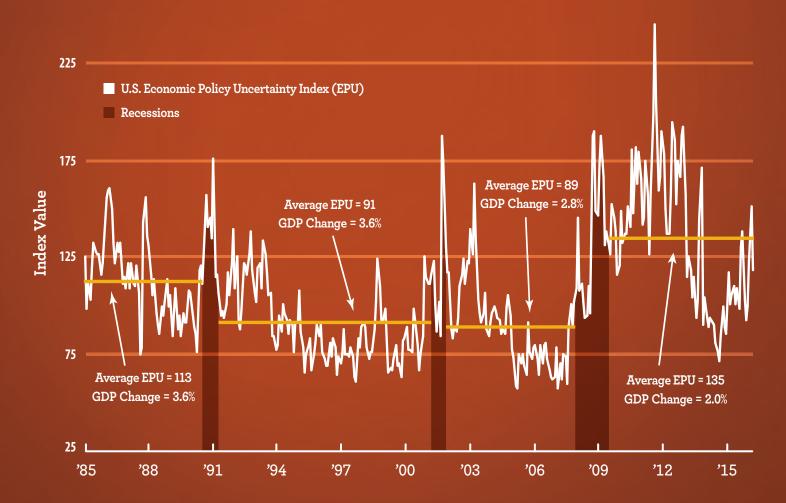


# Economic Uncertainty Often Makes Investors Defensive

Economic uncertainty can erode a country's financial markets. When the economic outlook is unclear due to policy changes, unanticipated events, or revolutionary technology, businesses and consumers alike often lean toward defensive behavior. Businesses may delay hiring and spending decisions, while consumers might postpone purchases of autos, homes, and appliances. Today's high level of uncertainty has corresponded to a period of slow economic growth. We believe that periods of economic uncertainty, while uncomfortable, may present opportunities for investors.

## Uncertainty and Recessions Appear to Be Related

Going back to 1985, U.S. recessions have always included uncertainty, but uncertainty hasn't always resulted in a recession.



Economic Policy Uncertainty Index produced by Baker, Bloom and Davis. policyuncertainty.com. Shaded areas represent recessions. The current average uncertainty is approximately 50% higher than prior to the last recession. Past performance is no guarantee of future results. **Sources:** Economic Policy Uncertainty Index, Bloomberg, Wells Fargo Investment Institute, April 7, 2016.

### Slow Growth Has Prompted Policy Changes

Since the Great Recession, market uncertainty has contributed to lower economic growth rates for a longer period of time than in previous recoveries. This has prompted many central banks to rely on unconventional methods to jump-start their economies. Since 2008-09, many countries, including the U.S., Japan, China, and the Eurozone, have used multiple rounds of quantitative easing (QE), and now some are even employing negative interest-rate policies (NIRPs), to spur growth. In acknowledgment of everincreasing global economic ties between the U.S. and the rest of the world, the Federal Reserve (Fed) has placed greater emphasis on global economic uncertainty when making recent domestic monetary policy decisions. Investors have been quick to react to each policy shift, leading to several stops and starts and accompanying volatility.



A common measure of economic uncertainty is the amount of cash businesses and households keep on hand.

Today, businesses hold the largest cash reserves since 2005, and households have the highest cash reserves since 1997. Some businesses are using the funds for dividend increases or stock buybacks.

Source: Federal Reserve, March 2016

#### External Events Can Cause Turmoil

Unexpected and momentous economic events or shocks can incite periods of capital market volatility. These may be particularly intense when the crisis epicenter is the financial system of a country or region. For example, the U.S. subprime mortgage and housing crisis of 2007 had devastating consequences for the U.S. and many other countries, resulting in trillions of dollars of losses and a global economy that has not yet fully recovered. For nearly eight years, households have been deleveraging and rebuilding financial safety nets. This process is contributing to a slower economic recovery than is typical.

Going back a few years, the 1997 Asian financial crisis, initiated by the collapse of the Thai baht, swiftly spread to other Asian countries and even raised concerns about a global financial meltdown. Thailand's surging economy came to a screeching halt, displacing workers across many sectors. In its wake, after two bailouts from the International Monetary Fund (IMF) and nearly four years later, the Thai economy finally recovered.



- Economic disruptions create uncertainty but may also offer attractive investment opportunities. Investors who look beyond temporary setbacks often can identify long-term investment trends.
- The slow global economic recovery and persistent uncertainty have delayed the exuberance and excess debt that typically cut economic recoveries short.
- Globally, health care and education should see additional demand from shifting demographics and a burgeoning middle class across the emerging world. Automobiles, appliances, and travel also are potential beneficiaries of an expanding middle class.

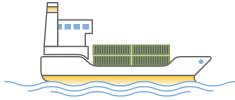


# Aftershocks Since the Great Recession Are Altering the Geopolitical Landscape

China, for example, turned its political ambitions outward after years of focusing on domestic pursuits. Elsewhere, established political and economic unions are in flux, as participants reevaluate their allegiances and consider new ties. Geopolitical change is disruptive but may pave the way for a more balanced and vibrant global economy with a deeper interconnectedness.

## Our International Equity Guidance





30%

Today, 30% of the world's trade passes through the South China Sea.

The Economist, Feb. 20, 2016





### Potential Geopolitical Shocks

China: The country's Belt and Road initiative aims to bolster China's political and economic aspirations across parts of Asia, the Middle East, Africa, and Europe. This ambitious undertaking for building infrastructure will span more than 60 countries and nearly two-thirds of the world's population at a cost of nearly \$4 trillion. Geopolitical risks associated with this bold endeavor include territorial disputes in the South China Sea and border clashes with Myanmar.

**Europe:** Widespread discontent with imposed austerity measures is fueling regional political tensions as the United Kingdom rethinks its ties to the continent. Within the UK and Spain, centuries-old separatist movements are reawakening, while anti-euro factions are challenging potent political forces. Yet this mounting uncertainty is sparking reforms to strengthen the union.

Middle East: A break from the geopolitical status quo is brewing in the Middle East and Northern Africa (MENA) region. The competing influences of low oil prices, cries for democracy, and Islamic fundamentalism are challenging transnational relationships and long-standing borders. Meanwhile, the U.S.-Iran nuclear agreement and the rise of Islamic State militants are exacerbating regional tensions. Flare-ups of social, political, and economic unrest in the region likely will ignite further outbreaks of market volatility.



The MENA region has a larger population than the U.S. and an economy roughly two-thirds the size of California's.

- Broad global equity exposure to a variety of sectors and geographies may provide opportunities and help mitigate geopolitical risks. Investors might consider firms involved with global infrastructure projects such as China's Belt and Road initiative.
- Several Middle Eastern oilproducing countries are striving for more diversified and globally connected economies, which could create opportunities for investors.
- Whether Europe's political turmoil results in a tighter union remains unclear. While this question remains outstanding, investors should not overlook Europe or other developed markets. Europe's cyclical recovery may provide tactical investment opportunities over the next few years.



# Technology Disruptors May Help Boost the Bottom Line

U.S. corporate profit margins are approaching all-time highs. Yet, looking ahead, prospects for revenue growth look anemic and nearly all extraneous costs have been removed from corporate cost structures. So how can companies sustain or even top today's healthy margins? The answer may lie in productivity enhancements driven by technological innovation.

### Technology's Potential Impact Touches Many Areas



#### **ROBOTICS**

The potential impact of robotics, automation, and artificial intelligence on workplace productivity, job definitions, career opportunities, and quality of life is tremendous. McKinsey estimates that about 60 percent of occupations could replace nearly one-third of worker activities with automation.

McKinsey, Feb. 2016



#### **CYBER SECURITY**

Online protection remains of utmost importance given the volume of personal data breaches over the past few years. A shift is underway from legacy to next-generation security providers that offer the latest in threat-prevention technologies.



**WEARABLE TECHNOLOGY** 

Devices that combine cell phones, computer applications, and clothing are transforming our daily lives and contributing to business efficiencies. But the real game changers may lie in applications related to fitness and health care.



#### **INTERNET OF THINGS (IOT)**

When physical objects embedded with technology and sensors are able to communicate and interact with the surrounding environment, a whole new world of possibilities unfolds. We could see refrigerators that order food or cars that identify the least-busy route to take during rush hour.



#### **MOBILE TECHNOLOGY**

As consumers spend more time on mobile devices, businesses must find effective ways to utilize this channel. Companies are striving to enhance customer interactions by devoting more of their advertising budgets to mobile and social media platforms.



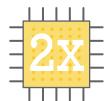
#### **DATA AND ANALYTICS**

Tracking customer activity is vital for increasing efficiency and gaining market share. Analytics are becoming increasingly valuable not only for the technology sector but also for the health care, financial, and industrial sectors.



#### **CLOUD COMPUTING**

Businesses are replacing traditional computer hardware and are migrating functions to the cloud. This eliminates the need for local servers to handle applications, reducing costs and increasing availability and efficiency.



#### **MOORE'S LAW**

A computing hardware observation that suggests that processing power doubles roughly every two years as smaller transistors are fit more tightly onto silicon chips.

### Advances Have Generally Been Net Positives

Technology and innovation traditionally have been fundamental drivers of productivity improvements, helping to reduce costs and boost profit margins. Advances in technological innovation can be beneficial for a company's bottom line. Yet, profitability is not the only goal of disruptive technology as companies aim to improve services, increase efficiencies, attract new customers, and enhance the customer experience.

Technology disruptions often raise concerns about worker displacement, but such fears, on the whole, have probably been overstated. After a period of adaptation, advances in technology can lead to improvements in productivity, efficiency, and standard of living.



# THE FUTURE IS NOW

Fingerprint recognition technology has a new contender. Wells Fargo is rolling out a biometric security application for its corporate customers later this summer. The system authenticates mobile users through their eye prints, eliminating the need for traditional usernames, passwords, and PINs. Individual characteristics such as voice tenor, facial shape, and eyes often are more secure than current identification methods. And the entire authentication process literally takes seconds to complete.

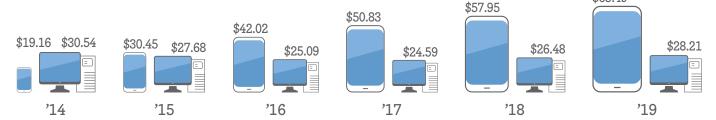
Looking ahead, the value of biometrics in the financial services industry is expected to soar from about \$126 million in 2015 to around \$2.2 billion by 2024.

Tractica LLC, The Wall Street Journal, and Wells Fargo

\$65.49

#### AD SPENDING IS LIKELY TO SHIFT FROM DESKTOP TO MOBILE

In Billions



**Source:** *eMarketer, April 22, 2016 2015-2019 are forecast values.* 

 $Mobile\ includes\ spending\ on\ tablets.\ Desktop\ includes\ spending\ primarily\ on\ desktop-based\ ads.\ Both\ include\ ads\ such\ as\ Facebook's\ News\ Feed\ Ads\ and\ Twitter's\ Promoted\ Tweets.$ 

- Investors should consider global companies that are increasing efficiencies by using innovative technologies and cheaper energy sources.
- 3-D printing still is in its early stages, but it is growing rapidly, creating a potential long-term opportunity for investors.
- Financial technology or "FinTech" is a burgeoning sector of pioneering companies that draw upon innovative technology to improve efficiencies for financial services, including banking, insurance, and investment management.



# New Ways of Doing Business Challenge the Status Quo

In recent years, innovative ventures and aspiring entrepreneurs have challenged traditional business models, redefining corporate strategies, and pioneering new types of corporate arrangements. Some of these disruptive forces have even reshaped entire industries. The term "disruption" often carries a negative connotation. But disruptions also can breed opportunities, especially if the innovative offshoots enrich our daily lives.

### Disruptive Innovation Often Changes the Business Landscape



DISRUPTOR: Cellular Phones
DISRUPTED: Fixed Line Telephones



DISRUPTOR: Massive Open Online Courses
DISRUPTED: Traditional College and University



DISRUPTOR: Online Video
DISRUPTED: Full Service Video Store



Over the past five years, online sales have grown tremendously.
The E-Commerce and Online Auctions industry estimates that revenue has increased at an 8.9 percent annualized rate over the past five years to \$314.9 billion in 2015.

## Spotting Trailblazers Early Is the Key

Harvard professor Clayton Christensen coined the term "disruptive innovation" to describe how small, nascent companies can successfully win market share from established businesses (see sidebar). Disruptive businesses provide more than technological enhancements to existing products and services. They make "products and services more accessible and affordable" and take market share from competitors.

We define "disruptive businesses" more broadly than Christensen. For instance, companies such as Tesla and Uber fall short of being considered classical disruptive innovators—neither company targets low-end customers or entirely new markets—yet both clearly are innovative and disruptive to their competitors and industries. The discovery of disruptive business ventures and business models is a challenge for investors, requiring equal parts investment expertise and sheer luck. However, successful disruptors often share similar characteristics, including lower margins, smaller target markets, and products or services that appear unattractive compared to existing ones.

More innovative disruption lies ahead in many sectors, including technology, health care, higher education, and e-commerce, as well as across geographies. The key for investors is to be able to spot disruptive trends early while recognizing that not all potential disruptors will be successful.



#### WHAT MAKES AN INNOVATION DISRUPTIVE?

According to Christensen, a disruptive innovation requires two essential components:

- A company markets its products or services to its most valuable customers while overlooking the needs of a lower-margin customer base.
- A new entrant targets the neglected customers with low-price replacements and eventually attracts all customer segments. Winning over the incumbent's mainstream customers is the point at which true disruptive innovation occurs.



In emerging and developing countries, 37 percent of adults own a smartphone, up from 21 percent in 2013.

South Korea has the highest penetration rate at 88 percent, while Uganda and Ethiopia tie for the lowest rate of 4 percent.

Source: Pew Research Center, February 22, 2016

- Investors might want to consider innovative businesses that are introducing cutting-edge concepts across traditional sectors, including real estate, food service, ground transport, and social sectors, along with education and health care.
- Alternative strategies such as private equity and venture capital offer exposure to budding trends and disruptive businesses over the long term.
- Equity Hedge, Activist, and Merger Arbitrage strategies can benefit from disruptive businesses. Equity Hedge strategies have long and short exposure to disruptive and disrupted companies. Activist strategies assist management teams in navigating businesses.

# INVESTMENTS THAT MAY BENEFIT FROM VOLATILITY AND DISRUPTIONS



#### STOCKS

At present, we believe equity valuations are fair, and our long-term outlook for corporate earnings growth is upbeat. In today's economic environment, we favor U.S. large-cap stocks. Many large-caps also offer

income potential as 60 percent of S&P 500 Index companies currently pay a dividend yield that exceeds the 10-year U.S. Treasury yield. Looking ahead, investors may want to consider exposure to sectors or companies poised to benefit from innovative disruptors, including information technology, industrials, biotechnology, health care, energy, and financials.



#### BONDS

While significant volatility in the bond market is not uncommon, it historically has come in spurts. Recognizing that interest-rate volatility is a normal component of bondmarket trading patterns, investors

should be prepared when it does occur. To help mitigate yield volatility, we encourage investors to keep maturities and durations slightly short of benchmarks. Moreover, as the Fed plans its next move, we recommend a move up in quality and a neutral weighting to the high-yield sector.



#### **REAL ASSETS**

This asset group is generally considered a portfolio diversifier. Oil fundamentals have been improving, but the recent sell-off has left prices significantly depressed. Low prices may present opportunities

based on a pickup in merger and acquisition activity and consolidation in this asset class. Real estate also currently offers attractive opportunities for investors, with solid fundamentals and attractive dividend yields. In particular, commercial real estate should benefit from increased economic activity.



#### **ALTERNATIVE INVESTMENTS**

In a volatile environment, it is important to diversify portfolios and consider investment choices that focus on unlocking value or complementing traditional equity and fixed-income allocations. Hedge

funds and private capital funds (private placements) can add an element of diversification to a portfolio, for those financially sophisticated investors willing to assume the risks associated with these investments especially during times of uncertainty—when it is needed the most. While not immune to downturns, tactical hedge fund strategies that trade in and out of positions can readily adapt to a dynamic environment, which can potentially add value during periods of uncertainty and smooth out returns.

# STRATEGIES FOR DEALING WITH MARKET VOLATILITY



# INVEST FOR THE LONG TERM

We caution investors to avoid the day-to-day noise from market pundits and naysayers. The more you understand the market, historical returns, and volatility, the better investment decisions you are likely to make.



# STAY FOCUSED ON YOUR GOALS

It's important to keep in mind why you are investing and stay focused on your objectives. Having well-defined goals is vital, since they help determine your time horizon. And knowing your time horizon is essential to formulating an appropriate asset allocation strategy.



# REVIEW YOUR ASSET ALLOCATION

During times of volatility, it's important to stick with your asset allocation and avoid making decisions based on emotion. Regular rebalancing back to target allocations is also important for keeping on track. When there's a need to change your goals or risk tolerance, we encourage you to review your portfolio with an investment professional.



# AVOID MARKET TIMING

Moving in and out of the market just before a downturn or rally is something even the most seasoned investment professionals rarely have done with consistency. We believe it's not market timing but time in the market that can lead to long-term success for investors.





# Now You Decide

Change is inevitable. As U.S. President John F. Kennedy articulated a few months prior to his untimely demise and six years prior to the first lunar landing, "Change is the law of life. And those who look only to the past or present are certain to miss the future." Investors who overlook changes brought about by innovative disruptors and disruptions may miss out on potential opportunities, especially over the long term.

Market volatility can be unsettling. Market corrections are typically fueled by sentiment and not necessarily changes in underlying fundamentals. Market downturns unsettle investors' emotions and test their resolve. During times of rising volatility, investors may become impulsive, allowing fear of the unknown to influence their decision-making process. And yet, periodic volatility can present potential opportunities for investors. We believe that taking modest amounts of risk during periods of volatility generated by market disruptions may prove beneficial, particularly in the long term.

With returns for many asset classes likely to be below average for the next few years, now may be an appropriate time to employ a well-diversified investment portfolio—one that includes a combination of equities, fixed income, real assets, and alternative investments. Investors allocated to a variety of asset classes and sectors can use diversification to navigate short-term volatility and longer-term disruptions.



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#### **Risk Considerations**

All investing involves risk, including the possible loss of principal. There can be no assurance that any investment strategy will be successful. Investments fluctuate with changes in market and economic conditions due to numerous factors some of which may be unpredictable. Asset allocation and diversification are investment methods used to help manage risk. They do not ensure a profit or protect against a loss. Some of the risks associated with the asset classes discussed in this report include:

**Alternative Investments/Strategies:** Alternative investments, such as hedge funds and private capital funds, are not suitable for all investors. Any offer to purchase or sell a specific alternative investment product will be made by the product's official offering documents.

Alternative Investment strategies, such as Equity Hedge, Activist and Merger Arbitrage are speculative and involve a high degree of risk. These strategies may expose investors to risks such as short selling, leverage risk, counterparty risk, liquidity risk, volatility risk, and other significant risks. **Equity Hedge** strategies maintain positions both long and short in primarily equity and equity derivative securities. **Activist strategies** employ an investment process primarily focused on opportunities in equity and equity related instruments of companies which are currently or prospectively engaged in a corporate transaction, security issuance/repurchase, asset sales, division spinoff or other catalyst oriented situation. **Merger Arbitrage** risk involves the risk that the proposed reorganizations in which the fund may invest may not be realized or may be renegotiated resulting in loss to the fund. There is no guarantee these strategies will be successful. Short selling involves the risk of potentially unlimited increase in the market value of the security sold short, which could result in potentially unlimited loss for the fund. In addition, taking short positions in securities is a form of leverage which may cause a portfolio to be more volatile.

**Hedge Funds** are complex, speculative investment vehicles and are not suitable or all investors. They are only available to persons who are "accredited investors" or "qualified purchasers" within the meaning of U.S. securities laws. Hedge funds trade in diverse complex strategies that are affected in different times by changing market conditions. Strategies may, at times, be out of market favor for considerable periods, resulting in adverse consequences for an investor.

Private Equity/Private Capital Funds are complex, speculative investment vehicles and are not suitable for all investors. They are generally open to qualified investors only and carry high costs, substantial risks, and may be highly volatile. There is often limited (or even non-existent) liquidity and a lack of transparency regarding the underlying assets. An investment in a private capital fund involves the risks inherent in an investment in securities, as well as specific risks associated with limited liquidity, the use of leverage and illiquid investments. Venture Capital refers to early-stage investing in small businesses or start-up companies that demonstrate above average growth potential. Because such businesses generally have little or no track record, these funds are subject to significant risks, including the risk that the projections and assumptions concerning the future of the business may not materialize because of market trends which can impact the company's growth potential. In addition, these companies may have limited financial resources; more asset concentration risk; narrower product lines and smaller market shares than larger companies.

**Equity Securities (stocks)** are subject to market risk which means their values may fluctuate in response to general economic and market conditions and the perception of individual issuers. There is no guarantee that dividend-paying stocks will return more than the overall stock market. Dividends are not guaranteed and are subject to change or elimination. Investments in equity securities, especially growth securities, are generally more volatile than other types of securities. Technology and Internet-related stocks, especially of smaller, less-seasoned companies, tend to be more volatile than the overall market.

**Fixed-Income Securities (bonds)** are subject to market, interest rate, credit and other risks. Bond prices fluctuate inversely to changes in interest rates. Therefore, a general rise in interest rates can result in the decline in the bond's price. Credit risk is the risk that an issuer will default on payments of interest and/or principal. This risk is heightened in lower rated bonds. High yield fixed income securities (junk bonds) are considered speculative, involve greater risk of default, and tend to be more volatile than investment grade fixed income securities. If sold prior to maturity, fixed income securities are subject to market risk. All fixed income investments may be worth less than their original cost upon redemption or maturity.

**Foreign Investing** involves greater risks than those associated with investing domestically including political, economic, currency and the risks associated with different accounting standards. These risks are heightened in emerging markets.

Real Assets are subject to the risks associated with real estate, commodities and other investments and may not be suitable for all investors. The commodities markets are considered speculative, carry substantial risks, and have experienced periods of extreme volatility. Investing in a volatile and uncertain commodities market may cause a portfolio to rapidly increase or decrease in value which may result in greater share price volatility. There are special risks associated with an investment in real estate, including the possible illiquidity of underlying properties, credit risk, interest rate fluctuations, and the impact of varied economic conditions.



For assistance with your investment planning or to discuss the points in this report, please talk to your investment professional.

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